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Keys to Mobile Application Success

One-click simplicity and cultural relevancy are UI keys

By [Geoff Koch](#), *Mobile Pipeline*

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Beyond adhering to the "keep it simple, stupid" principle, achieving a good user interface (UI) and overall design of a mobile application may be as much about culture as code. If you look at past design flops, current successes and likely future innovations, you'll see that designing a device without considering larger issues of markets and cultures is like building a car without thinking about the roads it will drive on.

For mobile designer Scott Jenson, the question is not what has worked historically. "Voice and SMS are the only two successes; they're the two that established the market," says Jenson, whose resume includes working on the Apple Newton and directing Symbian's DesignLab.

Despite showing early promise, Wireless Application Protocol (WAP) has famously failed to establish a market. Other mobile design flops include instant messaging, which offers little value beyond what SMS already provides, and SyncML, which has been dubbed more of a product demonstration than an actual implementation.

Jenson considers these failures to be prime examples of what he calls legacy thinking. When spinning visions of how today's technologies will be applied, it's natural -- and often wrong -- to look backward and describe how today's technology will solve yesterday's problems. The lesson of technology is that it's usually applied in ways its creators never intended, especially when it enters the mass market.

For example, before movies entered the mainstream, those trying to commercialize the technology predicted it would be used to capture stage plays. When Alexander Graham Bell's phone came along, some early boosters suggested that the device would be used to listen to opera from distant cities.

These visions, or usage models in today's parlance, say as much about the people spinning them as about the technologies themselves. Yesterday, it was affluent people talking about activities, such as stage plays and operas, which were important to them. Today, it's the most rabid technology users, perhaps similarly disconnected from ordinary consumers, who are coming up with fantastical notions of the mobile future.

"Voice and SMS are clearly important but uninteresting to this crowd," Jenson says. "Instead, they're infatuated with new ways of getting data over the Web and think that combining Web-based technologies with the ubiquitous phone" will lead to tomorrow's killer app.

But what if tomorrow never comes? For years, WAP has been on the verge of bringing the Web to phones, but evidence suggests that the protocol will come to a bad end. Prices are high, there are few applications, and carriers have too many content restrictions.

Several design lessons can be gleaned from WAP's failure. There has been considerable discussion about whether the WAP protocol design was appropriate. The initial design of WAP was specifically aimed at protocol independence across a range of different protocols (SMS, IP over PPP over a circuit switched bearer, IP over GPRS, etc). In short, WAP is just too complicated.

There are at least two good examples at the other end of the design simplicity spectrum. "What do Google and SMS have in common?" asked mobile blogger Russell Beattie. "In terms of interactivity, users just have to contend with one field."

While living in Spain a few years ago, Beattie observed that texting is so easy, and so embedded culturally, that on New Year's Eve, it's now a ritual in Spain and across Europe to send a short SMS greeting to everyone in your address book.

"There are hundreds of millions of messages sent that night," said Beattie. "It's a massive cultural change."

Beattie advises developers to think carefully about adding buttons, fields or any ounce of complexity to their mobile applications. Given how the masses use mobile devices and cell phones, these additional efforts might be wasted.

Author Howard Rheingold poured considerable journalistic effort into understanding the cell phone sea change in his 2003 book, "Smart Mobs," which chronicled how mobile applications have affected everything from teen dating to political organizing to managing organizations.

Here's how Rheingold begins his book:

"The signs of the next shift began to reveal themselves to me on a spring afternoon in the year 2000. That was when I began to notice people on the streets of Tokyo staring at their mobile phones instead of talking to them. The sight of this behavior, now commonplace in much of the world, triggered a sensation I had experienced a few times before -- the instant recognition that a technology is going to change my life in ways I can scarcely imagine." What does Rheingold consider to be the most sought after UI and

design attributes related to the trends he chronicled in "Smart Mobs"?

He cited some form of text messaging; showing the presence of others on the network (buddy lists); making it easy to forward or send messages to a list; offering many-to-many services that are easy to subscribe to, read, post and unsubscribe from; and allowing for quick blogging to public and private Web sites.

Beattie's eye, too, is drawn to blogging and the place where it intersects with the soon-to-be ubiquitous camera-enabled phone. He attended the Foo Camp in early 2004, a gathering in Sebastopol, Calif. arranged by tech publishing magnate, Tim O'Reilly. At the event, 200 techies set up tents and a Wi-Fi network and talked about the future.

Beattie's idea was to capture a record of the event by helping attendees post pictures and videos, many of which were captured with camera-enabled phones, on a Web site he set up just for the occasion, www.3gp.us. 3GP is the new, third-generation video file format developed for mobile phones. There's even an attempt to commercialize the decidedly ham radio-ish world of video logging (vlogging) or movie logging (mlogging). INdTV, the company founded by former Vice President Al Gore and entrepreneur Joel Hyatt, is actively hiring news correspondents.

Whether or not INdTV succeeds, text-based blogging has proved that multiple perspectives of the same event are interesting. Developers that make it one-click simple to create, view and publish video might reap huge rewards. The first effort to solve the video publishing problem, multimedia message service, or MMS, may be misguided. Compare the syntax, the nuts and bolts design, of SMS to that of MMS and big things pop out. SMS is extremely serial. You open a message, compose a message and send a message. There are no branches and very few decisions for users. The only complexity, really, is learning how to compose text messages by thumb.

Now consider MMS. Its syntax is basically equivalent to that of a Word document. An MMS message is basically an empty vessel into which it's possible to pour text, photos, sounds and videos. You can add these items in any order, which is confusing, and experienced SMSers can quickly stumble across errors that they've never seen before.

"I'll get into composing a MMS message, think I'm finished, and then the application will say that I can't send it, that I've forgotten to assign an addressee," said Jenson. "This isn't possible in SMS given its much simpler syntax."

MMS' flaws may go beyond syntax. The technology runs contrary to the reason, the "semantics" as Jenson calls it, why people use mobile devices in the first place--for quick, lightweight communication and coordination. What design trends are on the horizon in the highly fractious and segmented U.S. market? Jenson says that the phone is increasingly becoming the center of gravity in other consumer devices, pointing to the thumb-centric iPod as the best example.

Beattie thinks otherwise, suggesting that the familiarity with the e-mail and IM paradigms of messaging, coupled with expanding numbers of QWERTY-keyboard phones, positions the United States to leapfrog ahead of the rest of the world in its use of mobile applications.

For Rheingold, questions of future mobile UI and design are embedded in larger questions about the openness of the U.S. market. "Will there be easy-enough-to-program platforms for users to create applications? Will peer-to-peer communications be allowed, or blocked/prohibited by operators or political authorities?" he asked. "Those are not exactly UI, but if the operators and political powers allow it, the UI question is whether you have to be a skilled programmer, or whether there will be easier ways on the desktop or the mobile platform to create apps and spread them around."

Geoff Koch writes about science and technology from Lansing, Mich.